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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,840	05/19/2000	Edgar A. Mendoza	260/061	1340

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JONES, DAY, REAVIS & POGUE
555 WEST FIFTH STREET
SUITE 4600
LOS ANGELES, CA 90013-1025

EXAMINER

SANGHAVI, HEMANG

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/574,840

Applicant(s)

MENDOZA ET AL.

Examiner

Hemang Sanghavi

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 12-14,31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Invention 1, including claims 1-11 and 15-30, in Paper No. 7 is acknowledged.

Claim Objections

Claims 1 and 11 are objected to because of the following informalities: In claims 1 and 11, the parenthesis should be deleted in order to positively recite the claim limitation included within the parenthesis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 and 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Najafi et al (Journal of Lightwave Technology, 9/1998).

Najafi et al discloses a grating device comprising a substrate having a silicon dioxide surface and a photosensitive sol-gel derived film formed thereon. The film includes a waveguide channel therein having an index of refraction sufficiently higher than the index of refraction in adjacent regions (silicon dioxide surface). The channel having a continuous variation in index of refraction in the form of a grating. See Fig. 9. The channel also includes a metal oxide.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 7-11, and 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Najafi et al (Journal of Lightwave Technology, 9/1998).

Najafi et al, as discussed above, discloses a photosensitive sol-gel film on a substrate containing oxygen and silicon. The channel formed on the substrate includes SiO₂ with a metal (Zr and Al doped sol-gels).

Najafi et al fails to explicitly disclose chemical bonding structure for the channel, Si---O---M---O---Si where M is a metal.

However, as discussed above, Najafi et al discloses SiO₂ including a metal.

From available knowledge in the art, the ordinary artisan would have derived the chemical bonding structure of the sol-gel channel, which includes SiO_2 and the metal such as Zr and Al.

If not inherent, it is certainly obvious to one of the ordinary skilled in the art at the time of the invention to derive the chemical bonding structure $\text{Si---O---M---O---Si}$ for the channel of Najafi et al, which includes the SiO_2 , and the metal.

Najafi et al, as discussed above, fails to disclose electrodes on the channel, a plurality of waveguide channels including electrode means to switch the signal between the waveguides.

However, such configuration of the waveguides are well known in the art. The use of electrodes to change the refractive index of the waveguides is commonly done to efficiently control the light traveling in the waveguides.

From available well known techniques, the ordinary artisan would have found it to be obvious at the time of the invention to configure the waveguides of Najafi et al with electrodes for the purpose of advantageously controlling the light traveling through the waveguides.

Najafi et al also fail to disclose Dragone type well known optical device (a plurality of channels extending between an input and an output).

However at page 1645 last paragraph, Najafi et al teaches that the materials described in this paper are promising for low-cost and large scale production of integrated photonic circuit.

From collective teachings of Najafi et al, the ordinary artisan would have found it to be obvious at the time of the invention to use the sol-gel channel materials for making large scale waveguide structure such as Dragone type optical device for the purpose of advantageously reducing the cost of the device.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kancko et al, Zhang et al, and Sakano disclose different type of optical waveguide structures including SiO₂ with a metal on a substrate.

The prior art submitted by applicant has been considered. See attached copy of form PTO-1449.

Since the Najafi et al reference used in the above rejection was submitted by applicant in the prior art statement, no copy thereof is provided with this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is 703-305-3484. The examiner can normally be reached on Monday-Thursday (8:30 AM-6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Art Unit: 2874

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Hemang Sanghavi
Primary Examiner
Art Unit 2874

hs
December 2, 2002